```
=> s stent or vascular or atherosclerosis or coronary or vein
          7145 STENT
          7671 STENTS
          9579 STENT
                 (STENT OR STENTS)
        205742 VASCULAR
             8 VASCULARS
        205747 VASCULAR
                 (VASCULAR OR VASCULARS)
         65451 ATHEROSCLEROSIS
         84033 CORONARY
           270 CORONARIES
         84105 CORONARY
                 (CORONARY OR CORONARIES)
         71600 VEIN
         32264 VEINS
         92600 VEIN
                 (VEIN OR VEINS)
L1      392006 STENT OR VASCULAR OR ATHEROSCLEROSIS OR CORONARY OR VEIN

=> s alloy
        745351 ALLOY
        559190 ALLOYS
L2      931494 ALLOY
                 (ALLOY OR ALLOYS)

=> s l1 and l2
L3        1445 L1 AND L2

=> s magnesium or (alkaline earth metals) or Mg
        550353 MAGNESIUM
            91 MAGNESIUMS
        550388 MAGNESIUM
                 (MAGNESIUM OR MAGNESIUMS)
        141685 ALKALINE
            94 ALKALINES
        141764 ALKALINE
                 (ALKALINE OR ALKALINES)
        447006 ALK
           672 ALKS
        447366 ALK
                 (ALK OR ALKS)
        494203 ALKALINE
                 (ALKALINE OR ALK)
        358638 EARTH
         25270 EARTHS
        367494 EARTH
                 (EARTH OR EARTHS)
        951499 METALS
         21434 ALKALINE EARTH METALS
                 (ALKALINE(W)EARTH(W)METALS)
       1545360 MG
          1722 MGS
       1546537 MG
                 (MG OR MGS)
L4     1880948 MAGNESIUM OR (ALKALINE EARTH METALS) OR MG

=> s l3 and l4
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L5         221 L3 AND L4

=> s yttrium or (Group IIIB elements) or Y
        183830 YTTRIUM
             4 YTTRIUMS
        183830 YTTRIUM
                 (YTTRIUM OR YTTRIUMS)
       1836926 GROUP
       1210234 GROUPS
       2560155 GROUP
                 (GROUP OR GROUPS)
          9240 IIIB
        735467 ELEMENTS
           964 GROUP IIIB ELEMENTS
                 (GROUP(W)IIIB(W)ELEMENTS)
        365836 Y
L6      494539 YTTRIUM OR (GROUP IIIB ELEMENTS) OR Y

=> s l5 and l6
L7          46 L5 AND L6

=> s l7 and py<2004
      24034809 PY<2004
L8           6 L7 AND PY<2004

=> d ibib abs hitind 1-6
```

L8 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:228755 HCAPLUS <<LOGINID::20090310>>

DOCUMENT NUMBER: 134:242750

TITLE: Antimicrobial and anti-inflammatory endovascular (cardiovascular) stent

INVENTOR(S): Lee, Clarence C.

PATENT ASSIGNEE(S): USA

SOURCE: PCT Int. Appl., 27 pp. CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001021229	A1	20010329	WO 2000-US40979	20000922 <--

W: AU, CA, CN, JP
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.: US 1999-404577 A 19990923

AB An antimicrobial and anti-inflammatory endovascular (cardiovascular) stent includes base material for the stent and an incorporated antimicrobial agent for the treatment of diseased blood vessel in such way that the antimicrobial agent is slowly released into the disease blood vessel wall which is in direct contact with the stent to treat the blood vessel tissue or the plaque by both killing the disease-causing microbe(s) and relieving the inflammation. The stent can slowly release the antimicrobial and anti-inflammatory agent(s) directly to the diseased tissue or the plaque that is infected by microbes. Consequently, the inflammation is relieved by the anti-inflammatory agent and the inflammation causing microbes are

controlled or killed by the antimicrobial agent. A sterile, surgical steel, endovascular stent is aseptically dipped into a sterile solution of 20% benzalkonium chloride, 5% hydrocortisone and 75% ethanol solution

IC ICM A61L031-16

CC 63-8 (Pharmaceuticals)

ST stent cardiovascular antimicrobial antiinflammatory

IT Anti-inflammatory agents
Antibacterial agents
Antimicrobial agents
Antiviral agents
Fungicides
(antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)

IT Borides
Carbides
DNA
Enzymes, biological studies
Fluoropolymers, biological studies
Lipids, biological studies
Mucopolysaccharides, biological studies
Nitrides
Oxides (inorganic), biological studies
Polyacetylenes, biological studies
Polyamides, biological studies
Polyamides, biological studies
Polycarbonates, biological studies
Polyesters, biological studies
Polyethers, biological studies
Polynucleotides
Polyolefins
Polyoxyalkylenes, biological studies
Polysaccharides, biological studies
Polysulfones, biological studies
Polyurethanes, biological studies
Polyvinyl acetals
Polyvinyl butyrals
Proteins, general, biological studies
RNA
Shape memory alloys
Silicides
Steroids, biological studies
Sulfonamides
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)

IT Polyvinyl acetals
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(formals; antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)

IT Prosthetic materials and Prosthetics
(glass ceramics; antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)

IT Polyimides, biological studies
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polyamide-; antimicrobial and anti-inflammatory endovascular

(cardiovascular) stent)
IT Polyamides, biological studies
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polyimide-; antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)
IT Acetals
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polymers; antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)
IT Glass ceramics
(prosthetic; antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)
IT Medical goods
(stents; antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)
IT 69-72-7D, Salicylic acid, derivs. 208-96-8D, Acenaphthylene, polymers 7429-90-5, Aluminum, biological studies 7439-88-5, Iridium, biological studies 7439-89-6, Iron, biological studies 7439-92-1, Lead, biological studies 7439-93-2, Lithium, biological studies 7439-95-4, Magnesium, biological studies 7439-96-5, Manganese, biological studies 7439-98-7, Molybdenum, biological studies 7440-02-0, Nickel, biological studies 7440-03-1, Niobium, biological studies 7440-04-2, Osmium, biological studies 7440-05-3, Palladium, biological studies 7440-06-4, Platinum, biological studies 7440-08-6, Polonium, biological studies 7440-09-7, Potassium, biological studies 7440-15-5, Rhenium, biological studies 7440-16-6, Rhodium, biological studies 7440-18-8, Ruthenium, biological studies 7440-22-4, Silver, biological studies 7440-23-5, Sodium, biological studies 7440-25-7, Tantalum, biological studies 7440-31-5, Tin, biological studies 7440-32-6, Titanium, biological studies 7440-33-7, Tungsten, biological studies 7440-36-0, Antimony, biological studies 7440-41-7, Beryllium, biological studies 7440-44-0, Carbon, biological studies 7440-46-2, Cesium, biological studies 7440-47-3, Chromium, biological studies 7440-48-4, Cobalt, biological studies 7440-50-8, Copper, biological studies 7440-54-2, Gadolinium, biological studies 7440-55-3, Gallium, biological studies 7440-57-5, Gold, biological studies 7440-58-6, Hafnium, biological studies 7440-62-2, Vanadium, biological studies 7440-65-5, Yttrium, biological studies 7440-66-6, Zinc, biological studies 7440-67-7, Zirconium, biological studies 7440-74-6, Indium, biological studies 9002-84-0, Ptfe 9002-85-1, Polyvinylidene chloride 9002-86-2, Pvc 9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-17-2, Polybutadiene 9003-20-7, Polyvinyl acetate 9003-27-4, Polyisobutylene 9003-31-0, Polyisoprene 9003-39-8, Pvp 9003-44-5, Polyvinyl isobutyl ether 9003-53-6, Polystyrene 9003-95-6, Polyvinyl stearate 9010-98-4, Polychloroprene 9011-14-7, Pmma 10103-46-5, Calcium phosphate 24937-78-8, Eva 24980-41-4, Polycaprolactone 24981-14-4, Polyvinyl fluoride 25014-41-9, Polyacrylonitrile 25038-54-4, Poly(ε-aminocaproic acid), biological studies 25067-58-7, Polyacetylene 25067-59-8, Polyvinyl carbazole 25104-18-1, Poly(L-lysine) 25232-41-1, Poly(4-vinylpyridine_ 25248-42-4, Polycaprolactone 25322-68-3, Peg 26009-03-0, Polyglycolic acid 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26100-51-6, Poly(lactic acid) 26124-68-5, Polyglycolic acid 38000-06-5, Poly(L-lysine) 52013-44-2, Nitinol 80181-31-3, 3-Hydroxybutyric acid-3-hydroxyvaleric acid copolymer
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological

```
     study); USES (Uses)
        (antimicrobial and anti-inflammatory endovascular (cardiovascular)
        stent)
REFERENCE COUNT:         4     THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
                               RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8   ANSWER 2 OF 6  HCAPLUS  COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER:        1998:512310  HCAPLUS <<LOGINID::20090310>>
DOCUMENT NUMBER:         129:207253
ORIGINAL REFERENCE NO.:  129:41999a,42002a
TITLE:                   Medical goods comprising amorphous alloys
                         having specific magnetization susceptibility
INVENTOR(S):             Hata, Seiichi; Yamada, Norihiro; Shitamura, Koji;
                         Shibata, Norikiyo; Takahashi, Shigenari
PATENT ASSIGNEE(S):      Olympus Optical Co., Ltd., Japan; Inoue, Akihisa
SOURCE:                  Jpn. Kokai Tokkyo Koho, 12 pp.
                         CODEN: JKXXAF
DOCUMENT TYPE:           Patent
LANGUAGE:                Japanese
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE       APPLICATION NO.         DATE
     ---------------     ----   --------   --------------------    --------
     JP 10211184          A     19980811   JP 1997-19361           19970131 <--
     JP 3710582           B2    20051026
PRIORITY APPLN. INFO.:                     JP 1997-19361           19970131
AB   The medical goods, e.g. scissors for endoscopic biopsy, surgical clips,
     osteosynthesis plates, orthodontic wires, implants, injection needles,
     stents, needles for aspiration biopsy, etc., which do not
     interfere NMR imaging, comprise amorphous alloys of elements
     having magnetic susceptibility between -160 + 10-6 and +160 +
     10-6 emu·mol-1.  The alloys may be XaAlbYc (X = Zr, Ti,
     Mg, Hf; Y = Cu, B; 50 ≤ a ≤ 80; 5 ≤
     b ≤ 80; 0 ≤ c ≤ 50 atomic %) or XdAleYfZg (X,    Y
     = any metal given above; Z = Ni, Co, Fe; 50 ≤ d ≤ 80; 5
     ≤ e ≤ 80; 0 ≤ f ≤ 50; 5 ≤ g ≤ 20
     atomic %).  A pair of sampling caps for endoscopic biopsy was made from
     Zr60Al15Ni15Cu5Co5.  NMR image of a phantom on which the caps were
     attached had no distortion.
IC   ICM  A61B005-055
     ICS  C22C045-10; G01N033-48
CC   63-7 (Pharmaceuticals)
     Section cross-reference(s): 56
ST   medical good amorphous alloy magnetic susceptibility; MRI
     compatible medical good amorphous alloy; endoscopic biopsy
     forceps aluminum alloy; aluminum alloy MRI compatible
     medical good
IT   Imaging
        (NMR; medical goods comprising amorphous alloys having
        specific magnetization susceptibility which do not interfere MRI)
IT   Prosthetic materials and Prosthetics
     Prosthetic materials and Prosthetics
        (alloys, implants; medical goods comprising amorphous
        alloys having specific magnetization susceptibility which do
        not interfere MRI)
IT   Endoscopes
        (biopsy forceps; medical goods comprising amorphous alloys
        having specific magnetization susceptibility which do not interfere
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       MRI)
IT   Medical goods
        (clips; medical goods comprising amorphous alloys having
        specific magnetization susceptibility which do not interfere MRI)
IT   Medical goods
        (medical goods comprising amorphous alloys having specific
        magnetization susceptibility which do not interfere MRI)
IT   Metallic glasses
     RL: DEV (Device component use); PRP (Properties); THU (Therapeutic use);
     BIOL (Biological study); USES (Uses)
        (medical goods comprising amorphous alloys having specific
        magnetization susceptibility which do not interfere MRI)
IT   Syringes
        (needles for; medical goods comprising amorphous alloys
        having specific magnetization susceptibility which do not interfere
        MRI)
IT   Needles (tools)
        (needles, for syringes and aspiration biopsy; medical goods comprising
        amorphous alloys having specific magnetization susceptibility
        which do not interfere MRI)
IT   Dental materials and appliances
        (orthodontic wires; medical goods comprising amorphous alloys
        having specific magnetization susceptibility which do not interfere
        MRI)
IT   Medical goods
        (stents; medical goods comprising amorphous alloys
        having specific magnetization susceptibility which do not interfere
        MRI)
IT   Metallic glasses
     RL: DEV (Device component use); PRP (Properties); THU (Therapeutic use);
     BIOL (Biological study); USES (Uses)
        (zirconium alloy; medical goods comprising amorphous
        alloys having specific magnetization susceptibility which do
        not interfere MRI)
IT   163166-65-2   204505-59-9
     RL: DEV (Device component use); PRP (Properties); THU (Therapeutic use);
     BIOL (Biological study); USES (Uses)
        (medical goods comprising amorphous alloys having specific
        magnetization susceptibility which do not interfere MRI)

L8   ANSWER 3 OF 6  HCAPLUS  COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER:        1994:250721  HCAPLUS <<LOGINID::20090310>>
DOCUMENT NUMBER:         120:250721
ORIGINAL REFERENCE NO.:  120:44311a,44314a
TITLE:                   Production of bulk amorphous Mg85Y10Cu5 alloy
                         by extrusion of atomized amorphous powder
AUTHOR(S):               Kato, A.; Inoue, A.; Horikiri, H.; Masumoto, T.
CORPORATE SOURCE:        Inst. Mater. Res., Tohoku Univ., Sendai, 980, Japan
SOURCE:                  Materials Transactions, JIM (1994), 35(2),
                         125-9
                         CODEN: MTJIEY; ISSN: 0916-1821
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB   Amorphous Mg85Y10Ci5 powders with a particle size fraction less than 25
     μm were produced by using a newly designed high-pressure argon
     atomization-consolidation equipment in which each content of oxygen and
     moisture was controlled to be less than 1 ppm.  The extrusion of the
     amorphous powders at 373 K causes the formation of a bulk alloy
     having the nonequil. structure which is the same as that for the
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as-atomized powders. The thermal stability of the extruded alloy
is also the same as that for the as-atomized powders. The Young's
modulus, compressive fracture strength and fracture elongation at R.T. for
the bulk alloy are 46 GPa, 750 MPa and 1.8%, resp., which are
nearly the same as those for the melt-spun amorphous ribbon with the same
alloy composition The fracture surface of the bulk alloy
consists mainly of a vein pattern. No appreciable trace of the
original boundaries between the powders is seen and hence the powders seem
to have a truely bonding state. The good consolidation tendency is
presumably because of the clean surface state for the atomized powder by
the use of the closed preparation equipment.

CC 56-11 (Nonferrous Metals and Alloys)
ST amorphous magnesium alloy extrusion
IT Extrusion
(of amorphous magnesium alloy)
IT Metallic glasses
RL: PROC (Process)
(magnesium alloy, extrusion of)
IT 132754-66-6, Copper 5, magnesium 85, yttrium 10
(atomic)
RL: PROC (Process)
(amorphous, extrusion of)

ACCESSION NUMBER: 1966:29220 HCAPLUS <<LOGINID::20090310>>
DOCUMENT NUMBER: 64:29220
ORIGINAL REFERENCE NO.: 64:5450e-h
TITLE: Element content of bryophytes
AUTHOR(S): Shacklette, Hansford T.
SOURCE: U.S. Geological Survey Bulletin (1965), 1198-D, 21 pp.
CODEN: XDIGAS; ISSN: 0083-1093
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thirty-eight samples of liverworts and mosses and the substrates on which
they grew were analyzed for 33 elements by colorimetric, chemical, and
spectrographic methods. Average percentages of these elements in ash of
the bryophytes are: Ag 0.0009, Al 4.2, B 0.0093, Ba 0.4648, Be 0.0006, Bi
0.003, Ca 9.1, Ce 0.042, Co 0.0032, Cr 0.0079, Cu 0.0204, Fe 2.08, Ga
0.0018, I 0.0005, K 4.2, La 0.009, Mg 1.97, Mo 0.0012, Mn
0.3058, Nb 0.005, Nd 0.02, Ni 0.0083, P 0.96, Pb 0.186, Sc 0.001, Sn
0.002, Sr 0.0451, Ti 0.196, V 0.0071, Y 0.005, Yb 0.0006, Zn
0.152, and Zr 0.0124. The elements which were not found were: As, Au, Cd,
Dy, Er, Eu, Gd, Hf, Hg, Ho, In, Li, Lu, Pd, Pr, Re, Sb, Sm, Ta, Tb, Te,
Th, Tl, Tm, U, and W. Similarly, 1500 samples of vascular
plants from the same regions as the bryophytes were analyzed by the same
methods. Bryophytes contained greater percentages of 13 elements than did
vascular plants, lesser amts. of 15 elements and similar amts. of
3 elements. Nb and Sc are present in measurable amts. in bryophytes but
not in vascular plants. Cd, Li, and Re were found in
vascular plants but not bryophytes. Bryophytes have a lesser amount
of the major elements Ca, Mg, K, and P than vascular
plants. The content of an element in bryophytes is related to the content
of the same element in the supporting substrate only if the substrate
contains the element in greater than normal amts. Bryophytes, however,
can concentrate specific elements, including the rare earths, even where they
grow on substrates in which the elements were not detected. The ash of
certain bryophytes contained Ba 5.0, Cu 0.2, Pb 2.0, Sr 0.15, and Zn 2.0%;
Be, La, Ti, and Zr were more abundant in the substrates than in the plant

ash. Distinctive patterns of element absorption by bryophyte taxa are indicated but not proven.
CC 61 (Plant Biochemistry)
IT 7429-90-5, Aluminum 7439-89-6, Iron 7439-91-0, Lanthanum 7439-92-1, Lead 7439-95-4, Magnesium 7439-96-5, Manganese 7439-98-7, Molybdenum 7440-00-8, Neodymium 7440-02-0, Nickel 7440-03-1, Niobium 7440-09-7, Potassium 7440-20-2, Scandium 7440-22-4, Silver 7440-24-6, Strontium 7440-31-5, Tin 7440-32-6, Titanium 7440-39-3, Barium 7440-41-7, Beryllium 7440-45-1, Cerium 7440-47-3, Chromium 7440-50-8, Copper 7440-55-3, Gallium 7440-62-2, Vanadium 7440-64-4, Ytterbium 7440-65-5, Yttrium 7440-66-6, Zinc 7440-67-7, Zirconium 7440-69-9, Bismuth 7553-56-2, Iodine 7723-14-0, Phosphorus 14391-99-2, Calcium, isotope of mass 47 22541-53-3, Cobalt, ion 2+ 570400-21-4, Boron alloys, Hf-Mo-Ti-V-Zr-
(in liverworts and mosses)

L8 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1963:434473 HCAPLUS <<LOGINID::20090310>>
DOCUMENT NUMBER: 59:34473
ORIGINAL REFERENCE NO.: 59:6131h,6132a-b
TITLE: Conditions of formation of Iceland spar
AUTHOR(S): Shiritsya, O. S.; Vishnevs'kii, A. S.
CORPORATE SOURCE: Geol. Zh., Akad. Nauk Ukr. RSR
SOURCE: (1963), 23(2), 33-41
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB New occurrences of Iceland spar were discovered in Central Asia. Geol. structural and phys.-chemical conditions of their formation in this deposit were investigated. The country rocks (Devonain-Carboniferous limestones) and coarse-grained granites cutting limestones, together with disjunctive dislocations, were favorable for the formation of calcite veins containing Iceland spar. The Iceland spar-bearing druses are located in the fractured zones of near-contact marbles and metamorphic limestones about 200 m. distant from the contact with granite intrusions. The crystals of Iceland spar contain V traces, Cu .apprx. 0.001, Y 0.007-0.01, La 0.02-0.03, Ce .apprx.0.1, Pb 0.005-0.007, Ti traces to 0.001, Sr traces to 0.01, and Mg 0.03 to 0.1%. Evidently, admixt. of rare-earth elements played a favorable role in the formation of clear Iceland spar crystals: calcite of milky-white and blue color contained no La, Y , and Ce. The phys.chemical conditions of Iceland spar formation were studied from inclusions in its crystals. Three mineralization stages were separated: early, intermediary, and final. In the beginning, the solns. were homogeneous; in the 2nd stage liberation of CO2 occurred and the solution became deaerated and heterogeneous; and in the 3rd stage solns. again became homogeneous. There was a gradual decrease in mineral content of solns. during mineralization. The pressure dropped from 90 to 60 atmospheric, the temperature from 218 to 80°, and the pH from 6.5 to 5.5.
CC 25 (Mineralogical and Geological Chemistry)
IT 7440-45-1, Cerium 7440-65-5, Yttrium
(in calcite (Iceland spar) of Central Asia)
IT 570400-21-4, Boron alloys, Hf-Mo-Ti-V-Zr-
(minerals, review on)

L8 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1963:407895 HCAPLUS <<LOGINID::20090310>>
DOCUMENT NUMBER: 59:7895
ORIGINAL REFERENCE NO.: 59:1381f-h,1382c-g
TITLE: Moncheite and kotul'skite, new minerals; composition of michenerite

AUTHOR(S): Genkin, A. D.; Zhuravlev, N. N.; Smirnova, E. M.
CORPORATE SOURCE: M. V. Lomonosov State Univ., Moscow
SOURCE: Zapiski Vserossiiskogo Mineralogicheskogo Obshchestva (1963), 92, 33-50
CODEN: ZVMOEK; ISSN: 0869-6055
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB In vein Number 16 of the Cu-Ni sulfide ore deposits of Monchegorsk, since 1947, rare, previously unknown Pt telluride-bismuthides were observed which show analogies in their x-ray diffraction diagrams with synthetic PtTe2 and PdBi2 (described as michenerite from Sudbury). Minute grains of PtTe2, called moncheite as a new mineral, occur in interstices between chalcopyrite, pyrrhotite, and violarite, also intergrown with michenerite, and the other new mineral, called kotul'skite, which is a Pd-Te-Bi alloy. Moncheite has metallic luster, is steel-gray, reflectivity is 60%, and it is strongly anisotropic. A basal cleavage is indicated. It is insol. in acids and not etched by KOH, KCN, and FeCl3. Microspectral analysis data are: Pt 22-31, Bi 32-9, Pd 5-9.2, and Te 33.5-55.4%. The variation of the atomic ratio is Pt 0.5-0.7/Pd 0.2-0.4; Bi is 0.2-0.7%/Te 1.3-1.8 (Ni + Te = 2), corresponding to a formula (Pt, Pd) (Te, Bi)2, with ratio Pt/Pd variable between 2/1 and 3/1. The x-ray data are: hexagonal, a is 4.049 ± 0.001 and c 5.288 ± 0.005 A.; c/a is 1.281, in good agreement with PtTe2 (F. Gronvold, et al., Acta Chemical Scand. 14(9), 1879(1960)), and a synthetic alloy of moncheite composition Kutol'skite is found in small grains between chalcopyrite; it is of cream color and reflectivity is 66%; it is strongly anisotropic with slightly brownish to violet-gray tints. It is insol. in acids and very sluggishly etched by FeCl3. Microspectral analysis did not reveal any Pt, but Pd was 31, Bi 25, and Te 44%; the formula is Pd(TexBiy)1-2, with x > y. It is hexagonal, a is 4.19 ± 0.01 and c 5.67 ± 0.01 A.; c/a is 1.35. It is very similar to synthetic PdTe and to a synthetic alloy of Pt 74, Pd 135, Bi 360, and Te 29 mg., forming a yellowish crystalline phase with a 4.22 and c 5.68 A.; c/a is 1.34, and a ternary alloy of the system Pd-Bi-Te, with crystalline solns. Pd(Bi,Te)-Pd(Bi,Te)2. In comparison with the 2 new minerals, michenerite is distinguished by its distinctly lower reflectivity (56%) and isotropy. Microspectral analysis shows Pd 11.7-16.9; Bi 42.3-45.0; Pt 8.4-9.3; and Te 37.6-28.8%. The binary system Pd-Bi (CA 51, 15236e), indicates the mineral froodite (Hawley and Berry, CA 52, 19728e) identical with α-PdBi2, but not michenerite. X-ray diffraction shows for this mineral a cubic unit cell with a 6.654 ± 0.002 A. (pyrite type), similar to PtBi2, with statistical distribution of the metal atoms, and the approx. composition Pd0.75Pt0.25BiTe; d. is 10.4 (Pt-Bi2 has 13.5) and the atomic distances are Pd-Pd(Pt) 4.71, Bi-Bi(Te) 2.77; and Pd(Pt)-Bi(Te) 2.77 A. The formula PdBi2 is not correct. Synthetic michenerite shows in differential thermal analysis a strong endothermic effect at 500°, and 3 smaller effects at 420-80°, near 610, and at 780°. The micrograph of the alloy exposed for 250 hrs. at 400° shows complex incongruent fusion-crystallization phenomena, with michenerite prevailing, but also other phases are present. Of great crystallochem. importance is the occurrence of a complete crystalline solubility in the series PdTe-PdTe2, with transition from NiAs to CdI2 structure type, whereas in ternary mixes pyrite-type structures are absent. They are only verified in the complex composition of PtxBi2-Pd1-xTe2 (with x .apprx.0.25). A morphotropic change occurs from CdI2 to pyrite-type structure, with an increased share in covalent and a decreased share in metallic bonding characters. Further, there is a crystallization of anthophyllite in the Pt-Pd bearing chalcopyrite ore veins of the Mochegorsk deposit. The anthophyllite is most probably a recrystn. phase in the chalcopyrite ore

from primary anthophyllites. The primary ore composition of pyrrhotite + chalcopyrite + pentlandite is then changed to magnetite + chalcopyrite + violarite, cubanite, bornite, and Pt- minerals + anthophyllite, by residual solns. bearing Pt, Pd, Bi, and Te.

CC 25 (Mineralogical and Geological Chemistry)